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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors:

Hisao KOGA, et al.

Art Unit: 2661

Application No.:

10/719,061

Examiner: Unassigned

Filed:

November 24, 2003

For:

MULTICARRIER TRANSMITTER, MULTICARRIER RECEIVER, AND MULTICARRIER COMMUNICATIONS

APPARATUS

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner of Patents Washington, DC 20231

Dear Sir:

Pursuant to Rules 56 and 99, Applicants hereby call the attention of the Patent Office to the documents listed on the attached Form PTO 1449.

Applicants present this art so that the Patent Office may, in the first instance, determine any relevancy thereof to the presently claimed invention, see <u>Beckman Instruments</u>, <u>Inc. v. Chemtronics</u>, <u>Inc.</u>, 439 F.2d 1369, 1380, 165 USPQ 355, 364 (5th Cir. 1970). Also see Patent Office Rules 104 and 106. Applicants respectfully request that this art be expressly considered during the prosecution of this application and made of record herein and

appear among the "References Cited" on any patent to issue herefrom.

Respectfully submitted,

Date: August 4, 2006

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Registration No. 28,732

JEL/ejw

ATTORNEY DOCKET NO. <u>L8612.03108</u>

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FORM PTO-1449 U.S. Department of Commerce P (Rev. 4/92) Patent and Trademark Office P INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary AUS

ATTY. DOCKET NO.

L8612.03108

SERIAL NO.

10/719,061

APPLICANT

Hisao KOGA, et al

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GROUP Unassigned

U.S. PATENT DOCUMENTS														
	DOCUMENT NUMBER							DATE	NAME	CLASS	SUBCLASS	IF APPROPE	TETE_	
	6	4	7	3	4	0	9	10/2002	Malvar					
	6	4	8	7	5	7	4	11/2002	Malvar					
	6	4	9	6	7	9	5	12/2002	Malvar				-	
FOREIGN PATENT DOCUMENTS														
DOCUMENT NUMBER								DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION		
												YES	NO	
														
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)														
	J. Alhava, et al., "Adaptive Sine-Modulated/Cosine-Modulated Filter Bank Equalizer for Transmultiplexers," European Conference on Circuit Theory and Design, Espoo, Finland, Aug. 28-31, 2001, pp. 337-340.													
A. Viholainen, et al., "Implementation of Parallel Cosine and Sine Modulated Filter Banks for Equalized Transmultiplexer Systems," Telecommunications Laboratory, Tampere University of Technology, Tampere, Finland, IEEE, 2001, pp. 3625-2628.														
A. Viholainen, et al., "Complex Modulated Critically Sampled Filter Banks Based on Cosine and Sine Modulation," Institute of Communications Engineering, Tampere University of Technology, Tampere, Finland, IEEE, 2002, pp. 833-836.														
J. Alhava, et al., "Exponentially-Modulated Filter Bank-Based Transmultiplexer," Tampere University of Technology, Institute of Communications Engineering, Tampere, Finland, IEEE, 2003, pp. 233-236.														
J. Alhava, et al., "Efficient Implementation of Complex Exponentially-Modulated Filter Banks," Tampere University of Technology, Institute of Communications Engineering, Tampere, Finland, 2003, pp. 157-160.														
Y. Yang, et al., "DSP Implementation of Low-Complexity Equalizer for Multicarrier Systems," Institute of Communications Engineering, Tampere University of Technology, IEEE, 2003, pp. 271-274.														
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	J. Al Tran 31, 2 A. Vi Equa Tech A. Vi Sine Tam J. Al Univ pp. 2 J. Al Tam 2003	OTHER D J. Alhava Transmu 31, 2001, A. Vihola Equalize Technolo A. Vihola Sine Moc Tampere J. Alhava Universit pp. 233-2 J. Alhava Tampere 2003, pp. Y. Yang, Institute	OTHER DOCU J. Alhava, et a Transmultiple 31, 2001, pp. 3 A. Viholainen, Equalized Tra Technology, The Modulation of th	OTHER DOCUMENT OTHER DOCUMENT J. Alhava, et al., "Adams and the state of Communication of the state of the stat	OTHER DOCUMENTS (In J. Alhava, et al., "Adaptive Transmultiple exers," Euro 31, 2001, pp. 337-340. A. Viholainen, et al., "Impequalized Transmultiple Technology, Tampere, Finland, IEEE, J. Alhava, et al., "Expone University of Technology pp. 233-236. J. Alhava, et al., "Efficient Tampere University of Technology pp. 233-236. J. Alhava, et al., "Efficient Tampere University of Technology pp. 233-236. J. Alhava, et al., "DSP Impered University of Technology pp. 233-236.	DOCUMENT NUMBER 6 4 7 3 4 6 4 8 7 5 6 4 9 6 7 FOR DOCUMENT NUMBER TOUMENT NUMBER DOCUMENT NUMBER OTHER DOCUMENTS (Including of the content of the	DOCUMENT NUMBER 6 4 7 3 4 0 6 4 8 7 5 7 6 4 9 6 7 9 FOREIGN DOCUMENT NUMBER FOREIGN DOCUMENT NUMBER FOREIGN DOCUMENT NUMBER Alhava, et al., "Adaptive Sine-Modification of Sine Modulation," institute of Communication of Technology, Institute of Communication of Technology, Institute of Communications of Technology, Technology, Institute of Communications of Technol	DOCUMENT NUMBER 6 4 7 3 4 0 9 6 4 8 7 5 7 4 6 4 9 6 7 9 5 FOREIGN PATE DOCUMENT NUMBER TOTHER DOCUMENTS (Including Author, 1) J. Alhava, et al., "Adaptive Sine-Modulate Transmultiplexers," European Conference 31, 2001, pp. 337-340. A. Viholainen, et al., "Implementation of PEqualized Transmultiplexer Systems," Te Technology, Tampere, Finland, IEEE, 200 A. Viholainen, et al., "Complex Modulated Sine Modulation," institute of Communication Modulation, institute of Communication of Technology, Institute of Compp. 233-236. J. Alhava, et al., "Exponentially-Modulate University of Technology, Institute of Compp. 233-236. J. Alhava, et al., "Efficient Implementation Tampere University of Technology, Institute of Communications Engineering 1903, pp. 157-160.	DOCUMENT NUMBER 6 4 7 3 4 0 9 10/2002 6 4 8 7 5 7 4 11/2002 6 4 9 6 7 9 5 12/2002 FOREIGN PATENT DOCUM DOCUMENT NUMBER DATE DATE OTHER DOCUMENTS (Including Author, Title, Date, III) J. Alhava, et al., "Adaptive Sine-Modulated/Cosine-M Transmultiplexers," European Conference on Circuit 31, 2001, pp. 337-340. A. Viholainen, et al., "Implementation of Parallel Cosi Equalized Transmultiplexer Systems," Telecommunity Technology, Tampere, Finland, IEEE, 2001, pp. 3625- A. Viholainen, et al., "Complex Modulated Critically Sine Modulation," institute of Communications Engin Tampere, Finland, IEEE, 2002, pp. 833-836. J. Alhava, et al., "Exponentially-Modulated Filter Ban University of Technology, Institute of Communication pp. 233-236. J. Alhava, et al., "Efficient Implementation of Complet Tampere University of Technology, Institute of Communication pp. 233-236. J. Alhava, et al., "Efficient Implementation of Complet Tampere University of Technology, Institute of Communication pp. 233-236.	DOCUMENT NUMBER 6 4 7 3 4 0 9 10/2002 Malvar 6 4 8 7 5 7 4 11/2002 Malvar 6 4 9 6 7 9 5 12/2002 Malvar FOREIGN PATENT DOCUMENTS DOCUMENT NUMBER DATE COUNTRY	DOCUMENT NUMBER 6 4 7 3 4 0 9 10/2002 Malvar 6 4 8 7 5 7 4 11/2002 Malvar 6 4 9 6 7 9 5 12/2002 Malvar FOREIGN PATENT DOCUMENTS DOCUMENT NUMBER DATE COUNTRY CLASS OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) J. Alhava, et al., "Adaptive Sine-Modulated/Cosine-Modulated Filter Bank E Transmultiplexers," European Conference on Circuit Theory and Design, E 31, 2001, pp. 337-340. A. Viholainen, et al., "Implementation of Parallel Cosine and Sine Modulate Equalized Transmultiplexer Systems," Telecommunications Laboratory, Ta Technology, Tampere, Finland, IEEE, 2001, pp. 3625-2628. A. Viholainen, et al., "Complex Modulated Critically Sampled Filter Banks E Sine Modulation," Institute of Communications Engineering, Tampere University of Technology, Institute of Communications Engineering Tampere University of Technology, Institute of Communications Engineering Tampere University of Technology, Institute of Communications Engineering Tampere University of Technology Instit	DOCUMENT NUMBER DATE NAME CLASS SUBCLASS 16 4 7 3 4 0 9 10/2002 Malvar 6 4 8 7 5 7 4 11/2002 Malvar 6 4 9 6 7 9 5 12/2002 Malvar FOREIGN PATENT DOCUMENTS DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS FOREIGN PATENT DOCUMENTS DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) J. Alhava, et al., "Adaptive Sine-Modulated/Cosine-Modulated Filter Bank Equalizer fransmultiplexers, European Conference on Circuit Theory and Design, Espoo, Fini 13, 2001, pp. 337-340. A. Viholainen, et al., "Implementation of Parallel Cosine and Sine Modulated Filter Bacualized Transmultiplexer Systems," Telecommunications Laboratory, Tampere University of Technology, Tampere, Finland, IEEE, 2001, pp. 3625-2628. A. Viholainen, et al., "Complex Modulated Critically Sampled Filter Banks Based on Chief Sine Modulation, institute of Communications Engineering, Tampere University of Technology, Institute of Communications Engineering Technology, IEEE, 2003, pp. 157-160. Y. Yang, et al., "DSP Implementation of Low-Complexity Equalizer for Multicarrier Sylentific and Communications Engineering Technology IEEE, 2007, pp. 2007,	DATE NAME CLASS SUBCLASS INFORMERS OF THE PROPERTY OF TRANSPORT OF THE PROPERTY OF THE PROPERY	

EXAMINER

DATE CONSIDERED

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